



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/522,757

01/28/2005

Michael Richard Richardson

19941 (XA2017)

9342

23389 7590 06/17/2010
SCULLY SCOTT MURPHY & PRESSER, PC
400 GARDEN CITY PLAZA
SUITE 300
GARDEN CITY, NY 11530

EXAMINER

TAYONG, HELENE E

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

06/17/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/522,757

Applicant(s)

RICHARDSON, MICHAEL
RICHARD

Examiner

HELENE TAYONG

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-8 and 12-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-8 and 12-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Request for Continued Examination

1. The request filled on 5/24/10 for a Request for Continued Examination (RCE) under 37 CFR 1.114 based on parent Application No. 10522757 is acceptable and RCE has been established. An action on the RCE follows.

Claims 4-8 and 12-25 are pending and have been considered below.

Response to Arguments

2. Applicant's arguments with respect to rejection of Claims 2-8 and 12-23 under 35 U.S.C. § 103(a) as being unpatentable over Mege et al., U.S. Pat. Pub. 2001/0005406 (hereinafter "Mege") in view of Critchlow, U.S. Patent No. 5,276,706, and further in view of Zhou, U.S. Patent No. 6,859,491 have been considered but are moot in view of the new ground(s) of rejection because of amendment.

Claim Objections

3. Claim 17 is objected to because of the following informalities: In claim 17, line 1, change "A method according to claim 2" to - - A method according to claim 23 - -.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2611

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 20,23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mege et al (US (20010005406) in view of Liu (20050147188) and further in view of Sugiyama et al (US 7035337).

Art Unit: 2611

(1) with regards to claims 20, 23 and 24;

Mege et al in (fig. 2) discloses a method of regenerating a remotely transmitted signal (pg. 3, [0037]) comprising a symbol stream (fig. 1, (5) modulated (1) onto a carrier (3) in accordance with a predetermined standard (fig. 1 and 3, pg. 3, [0028]), the method including the steps of:

a) receiving the remotely transmitted signal having known characteristics (fig. 2, 10 and 9, pg. 3, [0037]);

b) determining frame timing of the received signal (fig. 2, 11, pg.3, [0039]-[0040]);

c) identifying the locations of sequences (synchronization pattern) within the signal from the frame timing (fig. 2, 11, pg.4, [0041]-[0044], page 5, [0057]);

d) identifying the structure of the sequences (page 3, [0036], page 5, [0066], pg. 7, [0067] and [0073]);

e) estimating phase shift values (ST) at the locations of the sequences (page 3, [0040], pg. 4, [0046]-0053]);

f) demodulating (fig. 2, 12) the symbol stream using the estimated phase shift (ST) values and the structure of the sequences (page 3, [0039], pg. 4, [0045]); and

(g) correcting the symbol stream by incorporating substitution of symbols in the symbol stream where prior knowledge of the symbol stream exists (page 3, [0031], [0038], fig. 6, 42 and 43, pg. 7, [0084]-[0085]).

h) remodulating (fig. 5, 1) the symbol stream (page 6, [0069], [0079], [0080]-[0082]);

Art Unit: 2611

i) using training sequences (fig. 5, 11) and correlation peaks (fig. 4) for multi-path compensation (fig. 6, 42 and 43, pg. 7, [0084]-[0085]) as applied in claim 24.

wherein the sequences include one training sequences, synchronization signals (fig. 1,5, fig. 2, 11), frequency correction bursts (SF) (page 4, [0041]) (page 3, [0031]-0036], page 3, [0092], Table 1 and page 4, [0054]).

Mege et al discloses all of the subject matter disclosed above, but for specifically teaching

(a) wherein the training sequences include eight training sequences associated with data bursts and a ninth training sequence associated with dummy bursts containing no data,

(b) correcting the symbol stream by incorporating substitution of symbols in the symbol stream where prior knowledge of the symbol stream exists

(i) with regards to item (a) above;

However Liu discloses identifying the training sequences of an arbitrary set of or all received burst (see abstract). On page 2, [0034]) Liu discloses **eight different** sequences are used for normal burst (associated with data burst) and a **ninth "training sequence"** is used for dummy burst (associated with dummy burst). Liu is silent about dummy burst containing no data. Further evidence by Tynderfeldt et al (US 2008 0025266 A1) that the **dummy burst contains no intelligent information** to mobile terminals (see abstract, figs. 6,7).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have utilized the method as taught by Liu in the method of Meye

Art Unit: 2611

et al in a manner as claimed in this application for the benefit of synchronizing communication devices.

(ii) with regards to item (b) above;

However, Sugiyama et al in the same endeavor (processing stream of data) discloses correcting means that substitutes the code symbol that do not match the parameter with the code symbol representing the end of the block (claim 11).

It would have been obvious to one of ordinary skilled in the art at the time the invention was made to have utilized the method as taught by Sugiyama et al in the method of Meye et al as modified by Liu in a manner as claimed in this application for the benefit of error correction and stability in data stream processing (col.3, lines 26-31).

6. Claims 4,14 and 17 are rejected under 35 U. S. C. 103(a) as being unpatentable over Mege et al (US 20010005406) in view of Liu (20050147188) and Sugiyama et al (US 7035337)as applied in claims 20 and 23 above and further in view of Brunner et al (US 6301470).

Art Unit: 2611

(1) with regards to claims 4,14 and 17;

Mege et al as modified by Liu discloses all of the subject matter disclosed above, but for specifically teaching wherein step f) further comprises comparing demodulated symbols with known symbols to provide an estimate of the symbol error rate.

However, Brunner et al in the same filed of endeavor, teaches comparing demodulated symbols with known symbols to provide an estimate of the symbol error rate (fig. 2, 14 and Col. 5, lines 40-47).

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the-device of Brunner et al in the method of Mege et al as modified by Liu in a manner as claimed in this application for the benefit of limiting detection errors.

7. Claims 5-8,12-13,15-16, 18-19, 21-22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mege et al (US (20010005406) , Liu (20050147188), Sugiyama et al (US 7035337), Brunner et al (US 6301470) as applied in claims 4 and 17 above, and further in view of Raith et al (US 4947409).

Art Unit: 2611

(1) with regards to claims 5,15 and 18;

Mege et al as modified by Liu discloses all of the subject matter disclosed above, but for specifically teaching wherein step a) includes down converting the received signal to a nominal OHz intermediate frequency.

However, Raith et al in the same filed of endeavor, teaches an intermediate frequency stage in (fig. 1, 2 and col. 2, lines 40-47) but not specific about down converting the received signal to a nominal OHz intermediate frequency.

Further evidence by Whikehart et al (US 5490173) in col. 1, lines 32-35 that conventional solution implementing digital circuits digitizes the received signal and performs a quadrature mix of the digitized signal to convert it directly to nominally 0 Hz IF.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have known to use the conventional method to down convert the received signal to a nominal OHz intermediate frequency.

(2) with regards to claims 6, 16 and 19;

Mege et al as modified by Liu et al discloses all of the subject matter disclosed above, but for specifically teaching wherein step a) further includes digitizing the intermediate frequency signal to provide a digitized symbol stream in a complex signal domain.

However, Raith et al in the same filed of endeavor, teaches an A/D converter (fig. 2, 3, col. 2, lines 48-52).

Art Unit: 2611

One of ordinary skilled in the art at the time of the invention would have been able to incorporate the device of Raith et al in the method of Mege et al as modified by Liu et al in a manner as claimed in this application for the benefit of processing speed.

(3) with regards to claims 7;

Mege et al further discloses wherein step e) includes estimating mean beat frequency of the signal, removing the estimated mean beat frequency from the signal and storing the mean beat frequency in a database. (fig. 4, 15 and pg. 4, [0046]).

(4) with regards to claim 8;

Mege et al further discloses wherein step e) further includes estimating residual phase shift of the signal and storing the estimated residual phase shift of the signal in the database (fig. 4, 14, pg.4, [0046]-[0053]).

(5) with regards to claims 12 and 21;

Mege et al further discloses the step of using training sequences (fig. 5, 11) and correlation peaks (fig. 4) for multi-path compensation (fig. 6, 42 and 43, pg. 7, [0084]-[0085]).

(6) with regards to claims 13, 22 and 25;

Mege et al further discloses wherein channel estimation (RC) of data sequences are used for multi-path compensation (page 4, [0043]-0045]).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Atobe et al (US 4525676) discloses PSK demodulation system having carrier frequency variation compensation.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELENE TAYONG whose telephone number is (571)270-1675. The examiner can normally be reached on Monday-Friday 8:00 am to 5:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/522,757

Page 11

Art Unit: 2611

/Helene Tayong/
Examiner, Art Unit 2611

June 12, 2010

/Shuwang Liu/

Supervisory Patent Examiner, Art Unit 2611